

Results are as follows:

<u>Line</u>	No. of plants tested	No. observed		χ^2 - probability tested for 15:1 ratio
		<u>Resistant</u>	<u>Susceptible</u>	
Fleetwood BC6-Are	9	9	0	
NEP-2	9	9	0	
<u>Fleetwood BC6-Are x NEP-2, F₂</u>				
1981 Spring	95	90	5	.90 - .80
1981 Winter	96	89	7	.25 - .50
Combined	191	179	12	.90

Both tests gave a good fit to a 15:1 ratio which would be expected for two independent genes giving resistance. Thus, NEP-2 must carry a dominant gene for resistance that is different from Are.

Backcross Breeding for Resistance to the Delta Race of Colletotrichum lindemuthianum in White Bean (Phaseolus vulgaris)

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The recent appearance (Wallen, 1976, Can. Dis. Surv. 50: 109) of the delta race of Colletotrichum lindemuthianum in southern Ontario led us to develop a backcross breeding program in which the 'Are' gene from PI 326418 (Cornell 49-242) was transferred to Fleetwood, Kentwood, Seafarer and Sanilac. Screening for race delta resistance and bean common mosaic virus (BCMV) races 1 and 15 was made on the progeny of each backcross. Homozygous lines resistant to delta C. lindemuthianum and BCMV were selected after six backcrosses. All homozygous lines were also screened for resistance to the alpha, beta, and gamma races of C. lindemuthianum.

Breeder's seed for the new delta resistant Fleetwood, Kentwood and Seafarer was increased. Sanilac has yet to be increased. The new cultivars were tested against the original cultivars at Dresden, Ontario in 1980. The new Seafarer yielded slightly lower, new Kentwood slightly higher and new Fleetwood about the same. In 1981 the new cultivars were tested in 8 Ontario Variety Trial locations. The average yields of the new cultivars from 6 accepted locations did not differ significantly from those of the respective original cultivars.